

Phonological representations in children with SLI : a study of French vowels.

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INTRODUCTION

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Previous research of children with SLI suggests that their phonological representations are less specified than those of their peers. For example, they are not able to distinguish between consonants that differ by one feature. They also produce more vowel errors in spontaneous speech errors than their peers.

STUDY

PURPOSE

- To investigate the quality of phonological representations of vowels in French-speaking children with SLI and children with NL

HYPOTHESES

- Our research showed more vowel production errors among children with SLI than among their language matched peers.
 - We expected to observe poor performances in the vowel perception tasks.

METHODOLOGY

PARTICIPANTS

• 19 children with SLI

- Aged from 6 to 13 years
- Monolingual French speakers
- QIP (WISC IV) > 82
- Language skills below 1.25 SD from the mean in 2 or more of 5 language areas
- No neurological or auditory disorders

• 19 children with NL

- No history of language disorders
- Monolingual French speakers
- Matched with children with SLI according to lexical reception, QI performance and gender

Variables	Children with SLI (n=19)		Children with NL (n=19)		T student value
	Mean	SD	Mean	SD	
Lexical reception (EVIP)	90.26	17.42	91.68	17.32	-0.2520 n.s.
QIP (WISC IV)	97.84	12.02	97.94	10.68	-0.0285 n.s.
Sentences production (ELO)	12.00	4.48	17.15	4.03	-3.72840***
Word repetition (ELO)	22.63	6.19	31.21	0.85	-5.98123***
Ecosse (number of errors)	16.47	9.80	9.78	3.67	2.782282***
Age (in months)	121.89	22.62	92.31	12.12	5.022486***

MATERIAL

- Children participated in two tasks : (1) a Vowel Discrimination Task and (2) a Vowel Mispronunciation task
- The stimuli consist of 6 pairs of vowel differing by one articulatory feature (eg. height: /i/ - /e/).

VOWEL DISCRIMINATION TASK

The **discrimination task** required the child to decide if the stimuli were the same or different (24 pairs were presented).

MISPRONUNCIATION TASK

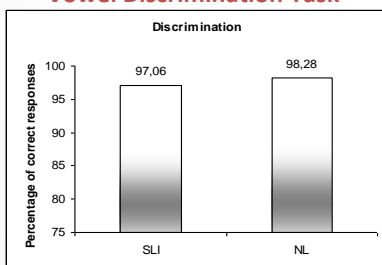
The **mispronunciation detection task** required the child to detect if a vowel change occurred in 60 familiar words.

Three different contexts were targeted:

1. Monosyllabic words (CV);
2. Multisyllabic words with the change occurring in the unaccentuated syllable (CVCV);
3. Multisyllabic words with the change occurring in the accentuated syllable (CVCV).

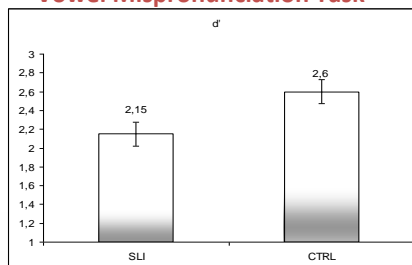
RESULTS

Vowel Discrimination Task

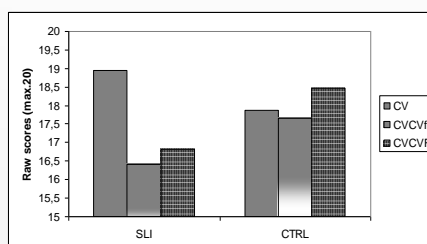


- Absence of group effect : SLI = NL ($t = 1, 15, p < .26$)
- The vowel discrimination was an easy task for all children (all performed at more than 80% accuracy)

Vowel Mispronunciation Task



- This task was more difficult for children with SLI as suggested by the group effect ($F(1,32) = 6,3, p < .05$)



- The context of the modification in pseudo-words influenced the performance of the children, especially children with SLI (SLI : $F(2,32) = 4,74, p < .05$ vs. NL : $F(2,32) < 1$)

DISCUSSION

- Children with SLI and children with NL had similar performances :
 - in vowel discrimination
 - in detecting vowel modifications in monosyllabic contexts (CV)

- But, children with SLI had impaired performances:
 - in detecting vowel modifications in plurisyllabic context (with or without accentuated syllable)

These results confirmed the **hypothesis of under specification of phonological representations** for children with SLI, including **vowels**.

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